

The Genus *Harmostes* Burm. (Coreidae, Heterop.).

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The genus *Harmostes* Burm. appears to be limited in its distribution to the New World, its species being recorded only from North, Central and South America, West Indies and the Galapagos Islands. Central America is probably its region of origin as the greatest number of species is to be found there and those occurring to the extreme north and south exhibit the greatest differences in structure. The genus now contains 16 species, 8 of which are represented in North America north of Mexico.

Harmostes is the largest and principal genus of the tribe Harmostini Stål and in general its diagnostic characters are those of Harmostini. *Aufcius* Stål and *Xenogenus* Berg, the other genera of the same tribe, may be separated from *Harmostes* as follows: *Aufcius* has the abdomen swollen or extended laterally beyond the hemelytra, and *Xenogenus* has a more elongated body and ocelli elevated. The key character for separating Harmostini from the remaining tribes of the subfamily Corizinae is the posterior femora spined beneath.

In establishing a key to the species, the use of color and color markings as diagnostic characters have been eliminated and structural differences relied upon entirely; these include principally the characters of the head and its parts, pronotal margins and angles, and size. The color within a species is quite variable, as is also the size, but the latter under certain limitations may be used.

The haplotype of the genus is *H. dorsalis* Burm., 1835, but which I now deem best to place in synonymy with *serratus* Fabr., 1794. The original description of *dorsalis* Burm. (*Supra brunneus fusco-striatus, subtus flavus, pronoti margine laterali lineaque media scutelli flavis; pectore linea laterali fusca. Long. 3-3½"*) is so meagre in detail that it is not possible to distinguish it from several other species. I therefore place it in synonymy with the oldest described species which falls within the genus and which has the same distribution as that stated for *dorsalis*. The coloration of *serratus*

Fabr. also fits that given for *dorsalis* Burm. The specimens which I have seen labeled "dorsalis" were determined as such by the late Mr. Otto Heidemann, but I am unable to distinguish them from *serratus*. W. L. Distant* states, "I have with Stål been unable to identify this species (*dorsalis*); it probably represents one of the preceding Mexican species; but the description is too slight for any accurate decision."

This paper is based upon specimens in the United States National Museum which had been previously determined by Messrs. P. R. Uhler, Otto Heidemann and R. M. Reuter, also upon considerable previously undetermined material, and includes one new species the type of which is in the collection of the U. S. National Museum. I am indebted to Mr. J. R. de la Torre Bueno for the privilege of examining a small collection of specimens in this genus, representing six species.

Genus **HARMOSTES** Burm.

Harmostes Burm., Handbuch der Ent., 1835.

The following is a translation by the author of the original description by Burmeister:

Resembles *Corisus* Fall., Hahn, but differing from it in having hind femora with pronounced spines. Antennae two-thirds as long as body, the first joint short, stout, and the two following delicate and of equal length, the fourth shorter than the preceding one and swollen at the apex. Ocelli near eyes. Thorax with raised curved margins, also always sloping. Front legs normal, the hind legs longer, with femora very thick, under side spiny.

A redescription of the genus is not at all necessary. Dallas gives as generic characters, besides those contained in the above description: breast furrowed longitudinally for the reception of the rostrum and rostrum reaching or passing the intermediate coxae, with its third joint as long as or longer than the fourth.

Key to the Species of Harmostes.

1. Lateral margins of pronotum crenulated.....2.
 Lateral margins of pronotum not crenulated.....8.

* Biologia Centrali-Americana, Hem. Het. Part 1, p. 168.

2. Rostrum extending beyond metasternum.....3.
Rostrum not extending beyond metasternum.....7.
3. Species large, 9-10 mm. long.....4.
Species smaller, not exceeding 8 mm. long.....5.
4. First antennal joint considerably passing apex of head, and fourth joint about twice as long as the first.....*nebulosus* Stål.
First antennal joint about reaching apex of head, and fourth joint but little longer than the first.....*formosus* Dist.
5. Second and third antennal joints equal.....*affinis* Dall.
Second antennal joint shorter than the third.....6.
6. Posterior angles of pronotum broadly rounding....*procerus* Berg.
Posterior angles of pronotum angular.....*prolixus* Stål.
7. Species small, not exceeding 5 mm. long.....*apicatus* Stål.
Species larger, exceeding 5 mm. long.....*serratus* Fabr.
8. Basal joint of antennae scarcely or slightly passing apex of head.....*fraterculus* Say.
Basal joint of antennae extending considerably beyond apex of head.9.
9. Lateral angles of pronotum broadly rounded.....10.
Lateral angles of pronotum not broadly rounded, angular.....11.
10. Second antennal joint shorter than third.....*subrufus* Dist.
Second and third antennal joints equal....*croceus* n. sp.
11. Species small, less than 7 mm. long.....*marmoratus* Spin.
Species larger, 7 mm. or more long.....12.
12. Species 9 mm. long.....*raphimerus* Spin.
Species less than 9 mm. long.....13.
13. Lateral margins of corium appearing very wide and distinctly luteous.....*bicolor* Dist.
Lateral margins of corium normal.....14.
14. Bucculae prominent, long, not disappearing before line of the eyes.....*reflexulus* Say.
Bucculae short, disappearing before line of eyes.....*minor* Spin.

Harmostes nebulosus Stål.

Harmostes nebulosus Stål, Hem. Mexicana, p. 307, Ent. Zeit, Nos. 7-9, 1862.

Head nearly twice as long as width between eyes. First joint of antennae passing apex of head and about one-half as long as fourth joint, second shorter than third, fourth not as swollen as the first. Rostrum extending beyond metasternum with darkened apex. Bucculae very prominent and rounding anteriorly and posteriorly. Lateral margins of pronotum crenulated. Pronotum coarsely and evenly punctate, median line distinct but not greatly raised. Membrane spotted with fuscous. Hind femora greatly incrassated, spined beneath with

four large prominent spines between which are three smaller ones. Size large, 9-10 mm. long. General color above light to dark brown, varying considerably within the species. Paler beneath. Lateral margins of corium spotted with fuscous.

Occurs in Mexico, Guatemala and Salvador.

Harmostes formosus Dist.

Harmostes formosus Dist., Biol. Cent.-Amer., Hem. Het., Vol. 1, p. 167, 1893.

"Head ochraceous. Antennae with the basal joint incrassate, dark ochraceous, and about reaching apex of head; second and third joints subequal in length, testaceous; apex of second joint fuscous; fourth joint short, a little longer than the first, thickened with fuscous. Pronotum ochraceous, finely punctate and obscurely wrinkled, subgranulose near anterior margin, with the lateral angles rounded and strongly reflexed; angular margins fuscous, lateral margins luteous and crenulated, anterior angles prominent; a central pale longitudinal line which is raised and levigate near anterior margin; posterior margin narrowly pale luteous. Scutellum ochraceous, with a central longitudinal line and apical margin pale luteous. Corium luteous, sparingly and finely punctate (clavus thickly so), with a large, elongated, fuscous spot on disk, a row of small fuscous spots on costal margin, and a larger spot of the same color near apical angle. Membrane pale hyaline, with obscure fuscous spots. Under side of body pale luteous, lateral margin of head and sternum strongly punctate; abdomen with a few scattered black punctures on anterior margin of disk, and stigmata black; femora luteous, with their apices, tibiae, tarsi, and rostrum testaceous. Rostrum just passing posterior coxae, with the apex pithy. Posterior femora with their apical halves strongly spined, four spines being longest, strongest, and luteous in color. Long. 9 mm., lat. pronot. ang. 3 mm."

The above is copied from the original description by Distant.

This species has been recorded only from Mexico.

Harmostes affinis Dall.

Harmostes affinis Dallas, Cat. Hem. Brit. Mus., p. 522, 1852.

Head small and strongly convex in both directions. First joint of antennae passing apex of head, second and third joints about equal in length, fourth longer than the first but not greatly swollen. Rostrum extending beyond metasternum. Lateral margins of pronotum crenulate, and with a deep but gradual curve; posterior portion of thorax prominently raised and evenly punctate. Hind femora incrassated and spined beneath. Size, rather small, about one quarter of an inch long.

General color light brown but quite variable. Scutellum and apex of corium dark. Thorax and corium spotted with small red dots. Membrane spotted with fuscous. Beneath pale, with prominent red spots well scattered; abdomen more or less mottled with fuscous.

Its range includes Southern United States, Mexico, Colombia and Paraguay.

Harmostes prolixus Stål.

Harmostes prolixus Stål, Bidrag till Rio Janeiro-Traktens. Hem. Fauna, p. 37, 1858.

Head broad, first joint of antennae passing apex of head, second shorter than third, fourth one-half longer than first joint. Rostrum extending beyond metasternum. Bucculae short, ending before line of the eyes. Eyes prominent. Lateral margins of pronotum crenulated to posterior angles. Median dorsal line almost disappearing in center of thorax. Thorax, scutellum, and corium finely and evenly punctate. Hemelytra widest at the middle. Membrane hyaline with faint fuscous spots. Hind legs with femora greatly incrassated and with three large prominent spines beneath, between which are from two to four smaller ones. Size about 7 mm. long. General color above dark brown but may vary to lighter shades. Beneath lemon yellow mottled with fuscous laterally. Posterior two-thirds of hind femora dark brown to black.

This species is reported from Rio Janeiro. I have also seen specimens from Mexico, Porto Rico and Paraguay.

Harmostes procerus Berg.

Harmostes procerus Berg, Hem. Argentina 1879, p. 91.

No specimens of this species have been examined, but by the original description it can readily be placed in the key to species and should be easily recognizable. A synopsis of the original description is here given:

Head moderately long, second joint of antennae shorter than the third, beak extending beyond the metasternum. Lateral margins of pronotum strongly crenulate, posterior angle broadly rounded. Membrane subhyaline with an obsolete median fuscous line. General color yellowish, corium tinged more or less with green. Size 5-6½ mm. long.

The most pronounced character by which the species may be separated from *H. prolixus* is the broadly rounding posterior angles of the pronotum.

Berg records its occurrence at Buenos Ayres and in Patagonia.

Harmostes apicatus Stål.

Harmostes apicatus Stål, Freg. Eug. Resa. Ins. p. 238, 1859.

Head broad, first antennal joint considerably passing apex of head, second and third joints about equal in length, fourth slightly longer than first. Beak not extending beyond metathorax. Bucculae disappearing at line of the eyes. Lateral margins of pronotum prominently raised and crenulated. Thorax and corium coarsely punctate. Hind femora greatly incrassated and spined beneath. Size 5 mm. long. Color light brown to russet above, somewhat paler beneath. Membrane hyaline with faint fuscous spots.

Its distribution includes Chile, Paraguay, Brazil and Argentina.

Harmostes serratus Fabr.

Acanthia serratus Fabr. Ent. System., iv., p. 75, 1794.

Harmostes perfunctatus Dall. 1852, List Spec. Hem. Ins. Brit. Mus. Part 2.

Coreus gravidator Fabr. Ent. System., iv., p. 133, 1794.

Harmostes dorsalis Burm. Handbuch der Ent. 1835.

Head long with long lateral spinous processes between eyes and antennae. First joint of antennae stout, but slightly passing apex of head, second joint shorter than third, fourth about equal to first in length. Beak not extending beyond metasternum. Bucculae not prominent, disappearing at line of eyes. Lateral margins of thorax crenulated, posterior margin wide. Pronotum, scutellum and corium coarsely punctate. Hind femora incrassated slightly before the middle making anterior portion of femora appear long. Size 7-8 mm. long.

General color above dark brown, paler beneath. Membrane hyaline with fuscous spots. Costal margin of corium pale.

The range of this species includes Brazil, Argentina, Paraguay, Galapagos Islands, West Indies, Central America and practically the entire United States.

Harmostes fraterculus Say.

Syromastes fraterculus Say, Desc. New Spec. Het. Hem. of N. A. New Harmony, Ind., 1831, p. 324.

Harmostes fraterculus Stål, Enum. Hem. 1, 221, 1870.

Head rather short, first antennal joint scarcely or slightly passing apex of head, second and third joints about equal in length, fourth joint only slightly longer than first and strongly pubescent. Bucculae small, ending before the line of eyes. Beak extending beyond metasternum. Lateral margins of pronotum not crenulated. Median line of pronotum distinct, becoming very prominent on scutellum. Thorax

and corium coarsely punctate. Hind femora incrassated with rather short spines beneath. Size less than one-fourth of an inch. Color above a russet brown tinged more or less with rufous. Paler beneath. Membrane marked with a longitudinal obsolete brown line and small fuscous spots.

It is well distributed over the United States and south through Central America.

Harmostes subrufus Dist.

Harmostes subrufus Dist., Biol. Cent.-Amer. Hem. Het. Vol. 1, p. 167, 1893.

"Head, pronotum, and scutellum luteous, sparingly but coarsely punctate. Antennae ochraceous; basal joint incrassated and considerably passing the apex of head; second joint a little shorter than the third, fourth a little darker in color, thickened and about equal in length to the first. Pronotum with lateral angles rounded, subprominent, and slightly reflexed, a central longitudinal line and posterior margin narrowly pale luteous; two obscure fuscous fasciae near lateral margins. Scutellum with the lateral and apical margins and a central longitudinal line pale luteous. Corium testaceous, nervures and costal margins luteous. Membrane pale and hyaline. Under-side of body and legs luteous; lateral margins of head and sternum strongly punctate. Long. 8 mm."

The above is a copy of the original description by Distant.

The species is known to occur in Mexico, Guatemala and southwestern United States. Four specimens in the collection of Mr. Bueno are the only ones of this species which I have examined, one of which is now deposited in the collection of the U. S. National Museum.

Harmostes croceus n. sp.

Resembles *subrufus*, but can be readily separated from it by the following characters: Second and third antennal joints equal, and lack of definite color markings or dark striations, its head, thorax, scutellum and corium being ochraceous and practically concolorous.

Basal joint of antennae extending beyond apex of head, second and third joints equal in length, fourth slightly longer than first and darker in color. Bucculae rather prominent, disappearing at line of eyes. Pronotum with lateral angles well rounded, slightly reflexed; lateral margins not crenulated. Veins of corium prominent. Posterior tibiae spinous. Rostrum not extending beyond metasternum. Breast fur-

rowed longitudinally for reception of rostrum. Antennae, head, thorax, scutellum and corium ochraceous, practically concolorous. Apex of corium slightly tinged with dark brown. Membrane hyaline. Ventral side of body light orange to yellow, concolorous. Length 7-9 mm. Sternum coarsely punctate.

Described from seven specimens from southern California. Have seen a single specimen from Oregon and one from Brewster County, Texas. Type and paratypes in collection of U. S. National Museum.

Harmostes marmoratus Spin.

Merocoris marmoratus Spin., Hist. de Chile. Gay, Vol. 7, p. 166, 1851.

Harmostes corazonus Dist., Trans. Ent. Soc. London, p. 85, 1893.

Head short, apex acute. First joint of antennae considerably passing apex of head, second and third joints short and about equal in length, fourth only slightly shorter than the third. Eyes prominent. Bucculae small. Beak not extending beyond metasternum. Lateral margins of thorax wide, entire, not crenulated. Posterior angles of thorax somewhat angular, not prominently rounded. Thorax coarsely punctate. Costal margins of corium practically parallel. Width between tips of corium greater than basal width of scutellum. Hind femora incrassated but not as pronounced as in other species. Size 5-6 mm. long.

General color above dark brown, corium except for the inner borders paler, beneath yellow, finely flaked with rufous. Membrane hyaline spotted with fuscous. Fourth antennal joint dark.

This species occurs in Chile.

Harmostes raphimerus Spin.

Merocoris raphimerus Spin., Hist. de Chile. Gay, Vol. 7, 1851.

Harmostes montivagus Dist., Trans. Ent. Soc. London, p. 85, 1893.

Head long, first antennal joint stout but considerably passing the apex of head, second shorter than the third and inflated at the base, fourth joint one-half the length of the third. Bucculae small. Beak extending to posterior margin of metasternum. Lateral margins of thorax entire, wide, and flaring. Posterior angles of thorax somewhat angular. Hemelytra widest at the middle. Hind femora not greatly incrassated, spines subprominent. Size 8-9 mm. long.

General color above yellowish brown, corium tinged with rufous posteriorly. Antennae ochraceous. Membrane hyaline, with faint fuscous spots.

This species occurs in Chile.

Harmostes bicolor Dist.

Harmostes bicolor Dist., Biol. Cent.-Amer., Hem. Het., Vol. 1, 1893.

"Head testaceous, obscurely punctate. Antennae with the basal joint considerably passing the apex of the head, and much shorter than the second joint. Pronotum testaceous, coarsely punctate; lateral margins, a central longitudinal line, and posterior margin (narrowly) pale luteous; lateral angles subprominent. Scutellum testaceous, with the lateral and apical margins pale luteous. Corium pale luteous; clavus, inner apical angles, and a series of small spots on costal margin testaceous. (In the type specimen described, the left corium has a large testaceous basal patch on lateral margin, which is followed by a subquadrate spot of the same color.) Membrane pale hyaline. Under side of body pale greenish, with a few scattered black punctures; legs ochraceous. Long. 7 mm."

The above is a copy of the original description by Distant.

Its range in the United States includes southern California, New Mexico, Colorado and Texas. It also occurs in Mexico.

Harmostes reflexulus Say.

Syromastes reflexulus Say, Desc. New Sp. Het. Hem. of N. A., New Harmony, Ind., p. 323, 1831.

Harmostes costalis H. S., Wanz. Ins., ix, p. 270, 1853.

Harmostes brucei Bergr., Ent. News, Vol. 24, p. 267, 1913.

Harmostes virescens Dall., List Hem. Ins. Brit. Mus. Part 2, 1852.

The following is a copy of the original description by Say and is in such detail that a redescription is not necessary:

"Reddish-brown; head carinate before. Inhabits Pennsylvania. Body reddish-brown, with rather large confluent punctures; head not extending more than half the length of the basal joint of the antennae, obviously carinate between the antennae, tubercles each side of the antennae acute: antennae, first joint robust, rough, much narrowed, second joint shorter than the third: terminal joint half as long as the third: thorax lateral margin a little reflected, the edge concavely arcuated: posterior angles rounded: anterior angles prominent, acute: scutel narrowed before the tip: hemelytra, corium yellowish, rufous near the scutel: nervures very distinct; lateral edge a little reflected: membrane hyaline: beneath greenish-yellow; feet pale rufous; posterior thighs dilated; spinous beneath. Length one-fourth of an inch. The rostrum hardly reaches the posterior coxae. The last joint of the antennae is elongate-oval and much shorter than the preceding joint, as defined by Latreille in this genus."

This species is distributed over the entire United States.

Harmostes minor Spin.

Microcoris minor Spin., Hist. de Chile, Gay, Vol. 7, p. 165, 1851.

Harmostes chilensis Dall., List. Hem. Ins. Brit. Mus. Part 2, 1852.

Head short, apex acute, first antennal joint considerably passing apex of head, second and third joints about equal in length, fourth about two-thirds the length of the third. Bucculae short, disappearing before line of the eyes. Beak extending beyond metasternum. Thorax coarsely punctured, lateral margins entire, wide, and somewhat flaring, posterior angles distinctly angular. Hind femora incrassated and with strong spines beneath. Size about 7 mm. long.

General color above greenish yellow to yellowish brown. Thorax tinged with rufous, scutellum distinctly yellow. Posterior border of thorax dark. Inner margins of corium distinctly rufous. Membrane hyaline. Yellow beneath.

Distribution includes southwestern United States, Chile and Argentina.

Harmostes obliquus Say.

Syromastes obliquus Say, Desc. New Sp. Het. Hem. of N. A., New Harmony, Ind., December, 1831.

There is considerable doubt as to this species. If it rightly belongs in *Harmostes* it could be distinguished from all other species by its remarkably small size, less than three-twentieths of an inch long. I have seen no specimen labeled "obliquus" and the original description is too meagre in structural details for me to attempt to place the species where it rightly belongs. I therefore simply append this species to the list of those belonging to this genus until the matter can be cleared up. Mr. VanDuzee, in his recent check list, inserts a question mark before the species. The following is a copy of the original description by Say:

"*S. obliquus*—all above punctured: rostrum and head rather short. Inhabits the U. S.

"Body pale yellowish-rufous; head obviously punctured, not extending to the tip of the first joint of the antennae; antennae, first joint robust; second hardly two-thirds as long as the third; thorax with rather large punctures; no obvious transverse impressed line; hemelytra, on the corium with large separate punctures; posterior edge very oblique and elongated; membrane immaculate, undulated by the nervures; beneath more obviously tinged with rufous; feet paler; rostrum hardly reaching the intermediate coxae. Length less than three-twentieths of an inch. It may be distinguished by the remarkable obliquity of the terminal line of the corium."

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Three new West Indian Species of the Ichneumonid Genus *Eiphosoma* (Hym.).

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The peculiar genus *Eiphosoma* is widely distributed in the American tropics, whence twelve species have already been described¹. In addition to these I obtained two others in Jamaica some years ago, and Dr. W. M. Mann discovered one in the neighboring island of Hayti. These are described on the following pages. The types are in the author's collection.

Eiphosoma luteum sp. nov. (Fig. 1).

♂. Length 12 mm. Almost entirely luteous, paler on the head and lower portions of the thorax; antennæ black, the scape and pedicel light brown below, darker above; basal joints of flagellum faintly tipped with pale yellow; ocellar area, connected with a large transverse marking on the occiput, black; teeth of mandibles black; middle lobe of mesonotum with a black spot in front, shading into a brown stripe behind; lateral lobes each with a brownish stripe; second and third abdominal segments black on upper edge except at tip; following segments similarly marked with piceous; tip of abdomen fuscous, external genitalia black; hind trochanters and femora at base and tip marked with fuscous; hind tibiæ dark above and their tarsi entirely dark fuscous. Wings hyaline, with a weak, but distinct infuscated area at tip.

Head broad and thin; ocelli large, the lateral ones removed by less than their diameter from the eye, twice as far from one another as from the eye. Antennæ reaching to middle of the second abdominal segment, about 37-jointed. Face shining, sparsely punctate, almost smooth medially; clypeus strongly protuberant medially; malar space two-thirds as long as width of mandible at base.

Mesonotum sparsely punctate medially, shining, on the lateral lobes almost without punctures. Scutellum smooth and shining. Propodeum

¹ See Cockerell, Proc. U. S. Nat. Mus., Vol. 46, pp. 61-64 (1913).